

Chapter E 318

CONTINUOUS RIGID CABLE SUPPORTS

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E 318.01 Scope. Continuous rigid cable supports, ventilated or non-ventilated, shall be of noncombustible materials and may be used for the support of the conductor assemblies described herein. It is not the intent of this chapter to require that cables be supported by continuous rigid cable supports or to recognize the use of conductors described in chapter E 310 in continuous rigid cable supports for general wiring.

History: Cr. Register, April, 1964, No. 100, eff. 5-1-64.

E 318.02 Construction. Continuous rigid cable supports shall be approved for the purpose and (1) shall have suitable strength and rigidity to provide a reliable support for the cables, (2) shall not present sharp edges, burrs, or projections to the cables, and (3) if of metal, they shall be adequately protected against corrosion or shall be of corrosion resistant material.

History: Cr. Register, April, 1964, No. 100, eff. 5-1-64.

E 318.03 Use. Continuous rigid cable supports may be used for exposed work in wet or dry locations, only in areas of fire-resistive or non-combustible construction. They shall not be used (1) in hoistways, (2) in hazardous locations, (3) where subject to severe physical damage, or (4) in areas having readily combustible contents.

History: Cr. Register, April, 1964, No. 100, eff. 5-1-64.

E 318.04 Installation. (1) Continuous rigid cable supports, (a) shall be installed as a complete system, including boxes and fittings if used; (b) each run shall be completely installed before the installation of cables; (c) in portions of runs where additional physical protection is advisable, non-combustible covers or enclosures providing the required protection may be used.

(2) When approved cables as listed in subsection E 318.07(1) are installed in the same continuous rigid cable support with other cable assemblies covered by section E 318.08, they shall be separated from such other cable assemblies by a solid non-combustible barrier.

History: Cr. Register, April, 1964, No. 100, eff. 5-1-64.

E 318.05 Extension through walls. Continuous rigid cable supports shall not extend transversely through a fire wall. They may extend transversely through a partition or wall (other than a fire wall) provided the section within the wall is unbroken, non-ventilated, and constructed as an approved wireway.

History: Cr. Register, April, 1964, No. 100, eff. 5-1-64.

E 318.06 Grounding. If of metal, all elements of continuous rigid cable supports shall be bonded together and grounded. Continuous rigid cable supports shall not be used either as grounded (neutral) conductors or as equipment grounding conductors.

History: Cr. Register, April, 1964, No. 100, eff. 5-1-64.

E 318.07 Wiring methods. (1) Continuous rigid cable supports shall contain only the following listed cables when installed in compliance with the requirements of sections E 318.01 through E 318.06 and the provisions of this section: (a) mineral-insulated metal-sheathed cables, (chapter E 330), (b) aluminum sheathed cable, (chapter E 331), (c) metal-clad cable, (chapter E 334), (d) non-metallic sheathed cable, (chapter E 336), (e) service entrance cables, (chapter E 338), (f) any approved conduit or raceway with its contained conductors.

(2) There shall be no more than 2 layers of cable or raceway in a continuous rigid cable support. If a second layer is installed, there shall be a continuous, ventilated non-combustible separator between layers, so located that there is at least one inch clear space between the bottom of the separator and the closest cable or raceway below.

(a) *Exception.* Only one layer of type MC cable may be installed in a continuous cable support in accordance with subsection E 334.08(1).

(3) The vertical spacing between continuous rigid cable supports shall be not less than 18 inches center to center.

History: Cr. Register, April, 1964, No. 100, eff. 5-1-64.

E 318.08 Other cable assemblies. (1) Factory-assembled multiple conductor control or signal circuit and power cables specifically approved for use in continuous rigid cable supports, may be used in industrial, commercial, or similar occupancies where installed in compliance with the requirements of this section and sections E 318.01 through E 318.06.

(2) Continuous rigid cable supports, if of metal, shall be mechanically and electrically connected to the enclosure in which the cables terminate. Cables shall pass through bushings where entering a raceway or other metal enclosure.

(3) Splices and taps shall be made only in junction boxes or fittings approved for the purpose.

(4) The sum of the cross-sectional area of all contained power and control cables shall not exceed 40% of the interior cross-sectional area of the continuous rigid cable support. Where the continuous rigid cable support employs side rails, the interior area is that contained within the rectangle using the top of the rail as the dimensions of the fourth side. Where no side rails are employed, the interior area is calculated by multiplying the continuous rigid cable support width by an assumed height of 4 inches.

(5) The current-carrying capacity for power and control cables installed in continuous rigid cable supports shall be calculated in accordance with the following:

(a) Where cables containing not more than 3 conductors are installed in ventilated continuous rigid cable supports and spacing between cables is maintained at from $\frac{1}{4}$ to one cable diameter, apply the following factors to the appropriate current-carrying capacity tables in chapter E 310.

TABLE E 318.08 (5) (a)
FACTORS FOR CABLES WITH MAINTAINED SPACING

Number of Cables Horizontally-----	1	2	3	4	5	6
Vertically						
1-----	1.00	0.93	0.87	0.84	0.83	0.82
2-----	0.89	0.83	0.79	0.76	0.75	0.74

(b) Where spacing is maintained using cables containing more than 3 conductors or when no spacing is maintained, the current-carrying capacity shall be calculated in accordance with the provisions of section E 310.11.

History: Cr. Register, April, 1964, No. 100, eff. 5-1-64.